

(12) United States Patent Hull et al.

(10) Patent No.: US 6,262,857 B1 (45) Date of Patent: Jul. 17, 2001

(54) DISK DRIVE INCLUDING A RECORDING SURFACE EMPLOYING SERVO ZONES WITH BANDED DATA ZONES

(75) Inventors: Richard William Hull, Laguna Hills; Vafa James Rakshani, Laguna Beach; David Price Turner, Los Gatos; Robert Leslie Cloke, Santa Clara, all

of CA (US)

(73) Assignee: Western Digital Corporation, Lake Forest, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/103,674(22) Filed: Jun. 23, 1998

Related U.S. Application Data

(63)	Continuation of application	No.	08/815,352,	filed	on	Mar.
	11, 1997.					

(51)	Int. Cl. ⁷	G11B 5/09 ; G11B 5/596
(52)	U.S. Cl	
		360/77 08

(56) References Cited

U.S. PATENT DOCUMENTS

4,016,603 4/1977 Ottesen.

4,151,571 • 4/1979	Cardot et al 360/77.08
5,193,034 3/1993	Tsuyoshi et al
5,196,970 * 3/1993	Scko et al 360/135
5,255,136 * 10/1993	Machado et al 360/44.08
5,384,671 1/1995	Fisher.
5,796,535 * 8/1998	Tuttle et al 360/51
6,084,738 7/2000	Duffy .

^{*} cited by examiner

Primary Examiner—Regina Y. Neal (74) Attorney, Agent, or Firm—Milad G Shara

57) ABSTRACT

A disk drive includes a disk having a disk surface, the disk surface having a plurality of tracks arranged in an embedded servo format. The disk surface includes a plurality of radially-extending user-data regions and a plurality of radially-extending servo-data regions. Each user-data region has a plurality of data zones in each of which user data are stored in a plurality of track segments at a data channel frequency particular to that data zone. Each servo-data region has a plurality of servo zones in each of which servo data are stored in a plurality of track segments at a servo channel frequency particular to that servo zone. The servo channel frequency differs from the data channel frequency for at least one track.

3 Claims, 16 Drawing Sheets

